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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,481	09/15/2003	Hiroshi Sato	1232-4540US1	2895

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EXAMINER	
LEE, CHEUKFAN	
ART UNIT	**PAPER NUMBER**
2627	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/663,481	SATO ET AL.	
	Examiner	Art Unit	
	Cheukfan Lee	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14 and 35-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,7,8,10,12,13,35,41 and 42* is/are rejected.

7)☒ Claim(s) *2-6, 9, 11, 14, and 36-40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/318,994.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/15/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Claims 1-14 and 35-42 are pending. Claims 1 and 35 are independent.

2. Applicant is reminded that claims 15-34 and 43-53 were canceled in the communication letter filed September 15, 2003 (page 3).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 7, 12, 13, 35, and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Maciey et al. (U.S. Patent No. 6,552,829).

Regarding claim 1, Maciey et al. discloses an image reading apparatus (100) for irradiating an original image (12) with a light source (light-emitting diodes LEDs 20a, 21a, or 25) and forming an image corresponding to the original image on an image sensing device (32a) through an imaging optical system (30a) (Figs. 3 and 4). The apparatus comprises control means for shifting an ON start timing of the LED light source for illuminating the original image (the start of the LED LIGHT SOURCE ON-TIME in Fig. 17) from a start timing of a predetermined charge storage period (detector exposure period) of the image sensing device (32a) (Fig. 17, col. 8, lines 10-13, col. 7,

line 45 to col. 8, line 20; col. 15, line 11 to col. 18, line 21; col. 18, line 54 and col. 19, lines 33-50).

Regarding claim 7, the light source (20a, 21a, or 25) contains a plurality of color components (col. 28, line 65 to col. 29, line 7; col. 7, lines 32-43, Figs. 2-4).

Regarding 12, Maciey further discloses that the image sensing device comprises multiple lines of photosensitive sites for reading images of different color components (col. 5, lines 62-67 and col. 30, lines 17-35).

Regarding claim 13, in controlling LED ON-time, Maciey turns on a "weak" LED for a longer period of time within a CCD exposure window. The period of time for which the LED is ON is controlled by a duty ratio of a control pulse (see LED light source ON-current signal in Fig. 17, and col. 16, lines 53-60, col. 17, lines 8-29).

Claim 35 is rejected as being a method claim corresponding to the rejected apparatus claim 1.

Claim 42 is rejected as being a method claim corresponding to the rejected apparatus claim 13.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 8 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maciey (U.S. Patent No. 6,552,829) in view of Ogura (U.S. Patent No. 6,181,442).

Regarding claim 8, Maciey discussed for claim 7 above further discloses that the light source (40a, 140a) comprise color LEDs (44 and 45 of 40a, 144 and 145 of 140a) for emitting light of the plurality of color components (Fig. 35, col. 30, lines 35-34), in order to accommodate (scan) a color original. Maciey differs from the claimed invention in that Maciey does not disclose causing the light source to emit the plurality of color components in accordance with the same control pulse.

Ogura et al. discloses that a single light source formed with white LED for emitting white light having (the) three colors mixed therein included in the contact type image sensor for scanning an original is known (col. 1, line 67 to col. 2, line 3). The three colors are understood to be three primary colors red, green and blue. The white light LED employed in a contact type image sensor.

Both Maciey and Ogura et al. employ LED light source in a contact type image sensor (Figs. 3 and 4 of Maciey, Fig. 5 of Ogura et al.). One of ordinary skill in the art would have realized that when a white light source is used to irradiate a color original under control of a pulse signal in color image scanning/reading, red, green and blue

color filters are employed in front of image sensor in order to obtain color image signals. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a white LED(s) as a white light source, which emits lights of a plurality of color components, as suggested by Ogura et al., such that the plurality of color components are emitted from the white light source under control of the same control pulse, in order obtain color signals using corresponding color filters. Substituting the sections (44 and 45, or 144 and 145 in Fig. 35) of LEDs of different colors of the light source of Maciey with the white light LED(s) and color filters simplifying the control and operation of the light source(s), including eliminating selection of a certain section of LEDs for irradiating or a certain part of the original (see Maciey, col. 30, lines 16-58).

Claim 41 is rejected as being a method claim corresponding to the rejected apparatus claim 8.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maciey et al. (U.S. Patent No. 6,552,829) in view of Nagano (U.S. Patent No. 4,731,661).

Regarding claim 10, the control of Maciey discussed for claim 1 above controls the ON timing of each of the LEDs such that the ON start timing of the LEDs are shifted from the start timing of the image sensor (Fig. 17, col. 8, lines 10-13, col. 7, line 45 to col. 8, line 20; col. 15, line 11 to col. 18, line 21; col. 18, line 54 and col. 19, lines 33-50). Although the light source comprises the LEDs and not a fluorescent lamp, using a fluorescent lamp as a linear light source in an image reading apparatus to illuminate an

original is not novel and is taught by Nagano (Fig. 4, col. 2, lines 30-37). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a fluorescent lamp as the linear light source of Maciey et al., as taught by Nagano, for light of high intensity.

8. Claims 2-6, 9, 11, 14, and 36-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is an examiner's statement of reasons for allowance:

Claim 2 would be allowable because the closest prior art Maciey (6,552,829) does not disclose that the control means control s phase of a control pulse for driving the light source so as to shift the ON start timing of the light source. The control means of Maciey et al. controls a time duration (within a CCD-detector exposure period) such that the ON start timing of the LED is shifted.

Claims 3-6 depend on claim 2, directly or indirectly, and would be allowable for the reason given for claim 2.

Claim 9 would be allowable because the closest prior art Maciey et al. (6,552,829) does not disclose that he plurality of color components contained in the light source have afterglow characteristics different from each other

Claim 11 would be allowable because Nagano (4,731,661), applied in the rejection of claim 10 upon which claim 11 depends, does not disclose that a plurality of

phosphors applied to an inner wall of a tube of the fluorescent lamp have afterglow characteristics different from each other as claimed.

Claim 14 would be allowable over Maciey et al. because Maciey et al. does not teach a memory storing relationships between phases and duty ratios of the control pulse, and does not teach that the control means, in controlling the phase of the control pulse for driving the light source, adjusts the phase of the control pulse with reference to the memory in accordance with the duty ratio of the control pulse determined by PWM as claimed.

Claim 36 is a method claim corresponding to the apparatus claim 2. Claim 36 would be allowable for the reason given for claim 2.

Claims 37-40 depend on claim 36.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Amimoto (U.S. Patent No. 6,545,777), "Image reading apparatus", Figs. 2 and 7-10

Ohtani et al. (U.S. Patent No. 6,084,692), "Image forming apparatus", Fig. 12

Ueta et al. (U.S. Patent No. 5,625,470), "Color image scanner having multiple LEDs and color image scanning method thereof", Figs. 4 and 6

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (571) 272-7407. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, (currently unknown) can be reached on (currently unknown). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
November 30, 2005

Cheukfan Lee